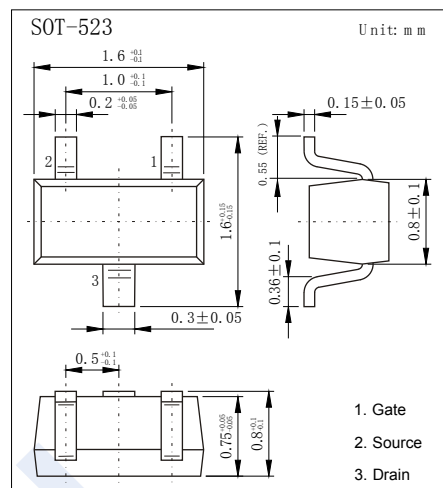
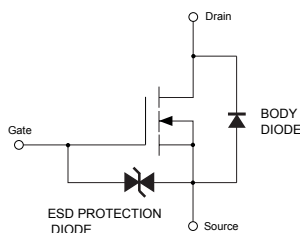


N-Channel MOSFET

RUE003N02

Features

- $V_{DS} (V) = 20V$
- $I_D = 0.3 A$
- $R_{DS(ON)} < 1 \Omega$ ($V_{GS} = 4V$)
- $R_{DS(ON)} < 1.2 \Omega$ ($V_{GS} = 2.5V$)
- $R_{DS(ON)} < 1.4 \Omega$ ($V_{GS} = 1.8V$)
- Fast switching speed.



Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 8	
Continuous Drain Current	I_D	300	mA
Pulsed Drain Current (Note.1)	I_{DM}	600	
Power Dissipation	P_D	150	mW
Thermal Resistance, Junction- to-Ambient	R_{thJA}	833	$^\circ C/W$
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

Electrical Characteristics $T_a = 25^\circ C$

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	$I_D = 1 mA, V_{GS} = 0V$	20			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS} = 20V, V_{GS} = 0V$			1	μA
Gate-Body Leakage Current	I_{GSS}	$V_{DS} = 0V, V_{GS} = \pm 8V$			± 10	μA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS} = 10V, I_D = 1 mA$	0.3		1	V
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS} = 4V, I_D = 0.3A$			1	Ω
		$V_{GS} = 2.5V, I_D = 0.3A$			1.2	
		$V_{GS} = 1.8V, I_D = 0.3A$			1.4	
Forward Transconductance	g_{FS}	$V_{DS} = 10V, I_D = 0.3A$	400			mS
Input Capacitance	C_{iss}	$V_{GS} = 0V, V_{DS} = 10V, f = 1MHz$		25		pF
Output Capacitance	C_{oss}			10		
Reverse Transfer Capacitance	C_{rss}			10		
Turn-On Delay Time	$t_{d(on)}$	$V_{GS} = 4V, V_{DS} = 10V, R_L = 67 \Omega, R_G = 10 \Omega, I_D = 150mA$		5		ns
Turn-On Rise Time	t_r			10		
Turn-Off Delay Time	$t_{d(off)}$			15		
Turn-Off Fall Time	t_f			10		
Diode Forward Voltage	V_{SD}	$I_S = 0.1A, V_{GS} = 0V$			1.2	V

Marking

Marking	TL
---------	----

N-Channel MOSFET

RUE003N02

Typical Characteristics

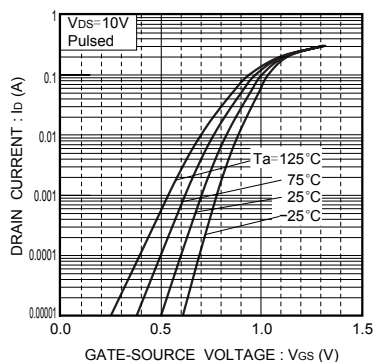


Fig.1 Typical transfer characteristics

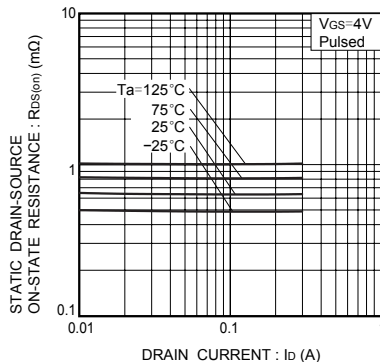


Fig.2 Static drain-source on-state resistance vs. drain current (I)

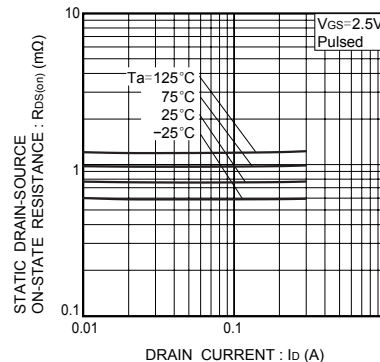


Fig.3 Static drain-source on-state resistance vs. drain current (II)

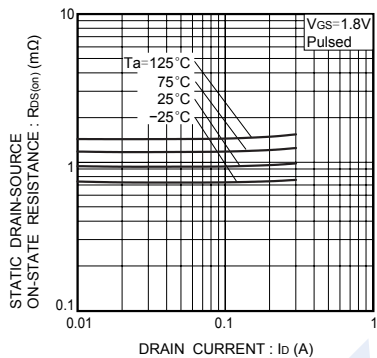


Fig.4 Static drain-source on-state resistance vs. drain current (III)

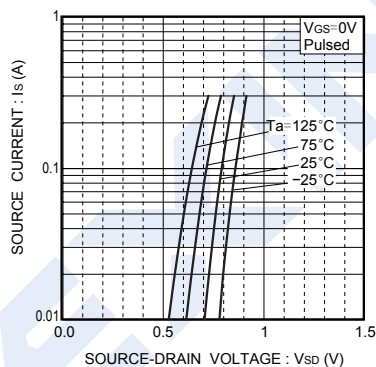


Fig.5 Source current vs. source-drain voltage

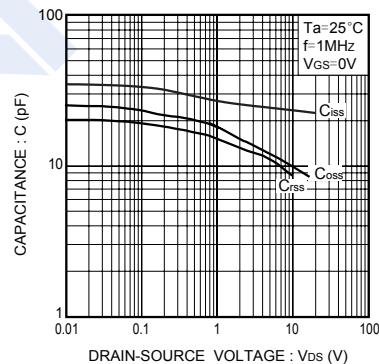


Fig.6 Typical capacitance vs. drain-source voltage

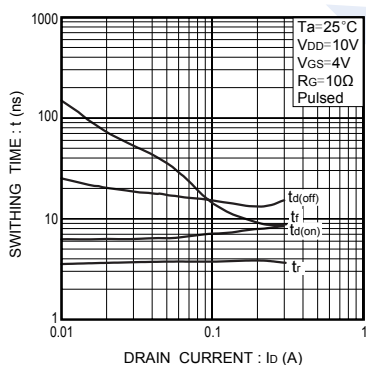


Fig.7 Switching characteristics

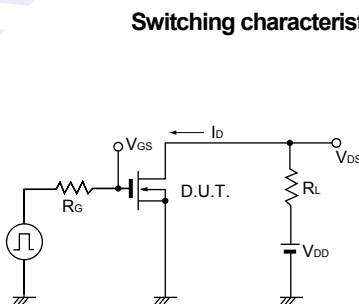


Fig.8 Switching time measurement circuit

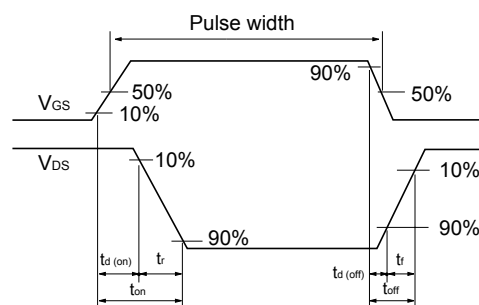


Fig.9 Switching time waveforms